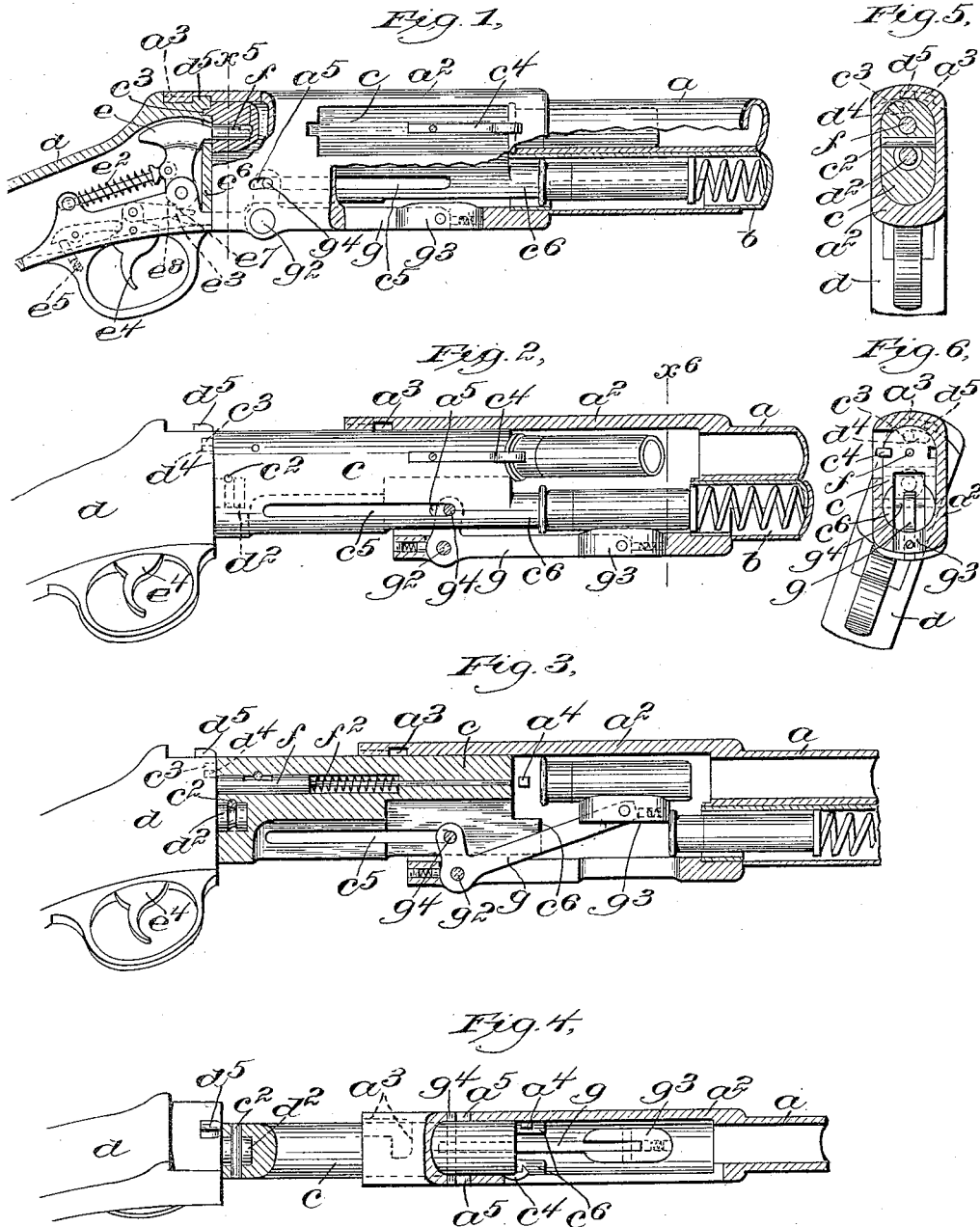


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MAGAZINE FIREARM.  
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1,179,880.

Patented Apr. 18, 1916.



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# UNITED STATES PATENT OFFICE.

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## MAGAZINE-FIREARM.

1,179,880.

Specification of Letters Patent.

Patented Apr. 18, 1916.

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*To all whom it may concern:*

Be it known that I, JOSEPH H. WESSON, a citizen of the United States, residing in Springfield, in the county of Hampden and State of Massachusetts, have invented an Improvement in Magazine-Firearms, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

The present invention relates to a fire arm, and is embodied in a repeating gun of the type which is now commonly referred to as a "pump" gun, in which the ejecting and loading are provided for by the reciprocating movement of a part or parts below the barrel in front of the trigger. In such guns, as commonly employed, the stock, the barrel, and the magazine, which is located below the barrel, are connected together, while the movement of the breech block to open the chamber for the ejection of the spent shell and the insertion of a new one is provided for by means of a separate reciprocating member which is usually connected with the fore-stock, the latter forming the reciprocating actuating device.

In accordance with the present invention, the breech block is connected with the stock; and the barrel and magazine together are longitudinally movable with relation to the breech block and stock, the forward movement of the barrel and magazine serving to open the chamber for ejection and reloading. In reloading the new cartridge is lifted at the end of the forward movement of the barrel by a device which is mechanically operated by the relative movement of the breech block and barrel, substantially at the end of said movement, the construction being extremely simple and positive in operation.

I have shown the invention as embodied in a repeating shot gun, it being obvious, however, that the same general mechanism might be employed in connection with rifles or other guns.

Figure 1 is a side elevation, partly in section, of a gun embodying the invention; Fig. 2 is a section of the part of the gun in front of the stock; Fig. 3 is a view, similar to Fig. 2, showing a new cartridge in position ready to be inserted into the chamber by the backward movement of the barrel and magazine; Fig. 4 is a plan view of Fig. 3, parts being broken away and

shown in section; Fig. 5 is a transverse vertical section on the line  $x^5$  of Fig. 1; and Fig. 6 is a transverse section on line  $x^6$  of Fig. 2.

In accordance with the invention, the barrel  $a$ , to which is connected the magazine  $b$  which extends along below the barrel, is provided with a rearwardly extending sleeve  $a^2$  which surrounds and fits over the breech block  $c$  which is connected with the stock  $d$  which contains the hammer mechanism behind the breech block.

I have shown the fire arm as provided with a self-cocking mechanism of that class in which the trigger when pulled cocks and releases the hammer at one movement. This cocking mechanism is shown as consisting of the hammer  $e$  provided with a hammer spring  $e^2$  which is acted upon by a sear  $e^3$  pivotally connected with a trigger  $e^4$  having a trigger spring  $e^5$ , the said sear being arranged to engage a shoulder  $e^7$  on the hub of the hammer. When the trigger is pulled the sear is pushed forward from the position shown in Fig. 1, engaging the shoulder  $e^7$  and causing the hammer to rock back against the stress of the spring  $e^2$ . In this rocking movement, a cam or inclined surface  $e^8$  formed on the hub of the hammer behind the shoulder  $e^7$  engages the upper surface of the sear, pushing the same downward until the said sear becomes disengaged from the shoulder  $e^7$ , thus releasing the hammer and allowing the same to strike the firing pin. The hammer  $e$  is arranged to act on a momentum firing pin  $f$  which, as best shown in Fig. 3, extends through the breech block  $c$  and is substantially equal in length to the said breech block, being moved backward into the path of the hammer when the hammer is cocked. The blow of the hammer on the firing pin is sufficient to give the firing pin  $f$  the momentum necessary to carry it forward beyond the face of the hammer and against the stress of the light restoring spring  $f^2$ , so that it will explode the cartridge after it has left the face of the hammer.

The breech block  $c$  is shown as non-circular in cross section, fitting closely in the chamber portion of the barrel which is of the same shape, so that one of these parts may be longitudinally moved with relation to the other, but is incapable of rotation with relation thereto. This affords means for locking the barrel to the stock when

the gun is in firing condition, the stock  $d$  being shown as connected with the breech block  $c$  by means of a swivel, herein shown as a grooved projection  $d^2$  at the front of the lock frame which enters a bore at the rear of the breech block, and is held therein by means of a transverse pin  $c^2$ . The said breech block is shown as provided with a projection  $c^3$  which enters a curved slot  $d^4$  in the front of the frame, the ends of said slot constituting limiting shoulders to confine the relative rotary movement of the stock and breech block. The said frame is further provided with a projection  $d^5$  which enters a bayonet groove  $a^3$  in the barrel part, so that the barrel is locked to or released from the stock by a slight twisting movement of one part relative to the other.

The ejector mechanism operates in substantially the usual way, the breech block having an extractor hook  $c^4$  to engage the flange of the cartridge when the latter has entered the chamber, while the barrel-part is provided with the ejector projection  $a^4$  to engage the back of the cartridge at the end of the relative movement of the breech block and barrel.

In order to insert the new cartridge in the chamber, the barrel part is provided below the chamber with a lifter  $g$ , which normally lies under the breech-block, but is moved forward with relation to the breech-block during the ejecting and loading operation. The normal position of said lifter is shown in Figs. 1 and 2, while the lifting position is shown in Fig. 3. As shown in Figs. 1 and 2, a new cartridge from the magazine follows the breech-block as the breech-block and barrel are separated, and moves over the lifter ready to be operated on and lifted, as shown in Fig. 3. The said lifter is shown as an elbow lever pivoted at  $g^2$  in the lower wall of the chamber and having a pivotally connected shoe  $g^3$  at the end to engage the loaded cartridge.

To operate the elbow lever  $g$ , one arm thereof is provided with a lateral projection  $g^4$  which extends into or through a channel or slot  $c^5$  in the lower part of the movable breech block  $c$ , the said channel being slightly shorter than the range of movement of the barrel with relation to the breech block, so that at the extreme ends of such movement the elbow lever  $g$  will be rocked upward or downward through the engagement of the projection  $g^4$  with the ends of the channel  $c^5$ . As the gun is opened, that is to say as the barrel and magazine are moved forward with relation to the stock and breech block from the position shown in Fig. 1 to that shown in Fig. 2, the elbow lever  $g$  will travel with relation to the slot  $c^5$  without movement on its pivot  $g^2$  until the transverse pin  $g^4$  reaches the end of the slot  $c^5$ ; a continued movement

then causing the elbow lever to rock on the pivot  $g^2$  to the position shown in Fig. 3 carrying to loading position the new cartridge which has been pushed back through the action of the magazine spring. In the meanwhile, the empty shell has been ejected as clearly shown in Fig. 2, and when the barrel is pushed back to close the gun, the shell shown in Fig. 3 is inserted in the chamber. The lifter  $g^3$  remains up, supporting the loaded shell and forming an abutment for the next shell in the magazine, until the gun is nearly closed, when the elbow lever is pushed down by the engagement of the rear end of the slot with the pin  $g^4$ .

The movement of the elbow lever may conveniently be limited by providing the wall of the sleeve with a short slot  $a^5$  through which the projection  $g^4$  also extends, the length of this slot limiting the possible movement of the elbow lever  $g$ .

The operation of the mechanism is as follows: Assuming that a cartridge has been fired, the barrel  $a$  is unlocked from the stock  $d$  by the twisting movement above described, and then pushed forward a little beyond the position shown in Fig. 2, the extractor hook  $c^4$  pulling the spent shell back until the said shell is kicked out by engagement with the ejector shoulder  $a^4$ . During this movement, a new cartridge has been pushed back by the magazine spring to the position shown in Fig. 2, and a slight further movement will cause the elbow lever  $g$  to move to the position shown in Fig. 3, thus lifting the new cartridge to a position where it will be pushed into the chamber during the rearward movement of the barrel.

The breech block  $c$  is shown as bifurcated or recessed underneath and provided with a forward extension  $c^6$  at the bottom which constitutes an abutment for the next cartridge in the magazine.

The lifting shoe  $g^3$  and its operating lever  $g$  are shown as located in the middle of the gun, the shoe being capable of entering the recess in the under surface of the breech block, so that the said shoe can be moved up and down with relation to the said breech block regardless of the position of the said block. In the operation, therefore, when the barrel is moved forward, the spent shell is caught by the hook  $c^4$  and ejected upon its engagement with the ejector  $a^4$  as shown in Fig. 2; this taking place almost at the end of the forward movement of the barrel. During the last of the forward movement of the barrel, the projection  $g^4$  is caught by the end of the slot  $c^5$  and the shoe  $g^3$  is kicked up to the position shown in Fig. 3 throwing a loaded cartridge into alignment with the barrel  $a$ . This movement also carries the shoe  $g^3$  into the path of the car-

tridge next in line so as to prevent the same from escaping from the magazine, as shown in Fig. 3 and the said shoe remains in this position during the closing movement of the gun because the lever is not thrown down until the cross pin  $g^4$  is engaged by the rear end of the slot  $c^5$ , as shown in Fig. 1.

It is to be noted that by utilizing the twisting movement for locking and unlocking the separable parts, provision is made for preventing the gun from being fired unless it is locked, because the firing pin is out of line with the hammer in all other positions. Furthermore, the combination with the self-cocking mechanism of the momentum firing pin renders it impossible to fire the gun accidentally, *i. e.*, in any other way than by accidentally causing a full operative movement of the trigger.

The arrangement of the lock is such that the hammer brings up against the front plate  $e^6$  of the lock-frame, which has an opening into which the firing pin projects when the hammer is drawn back. The striking face of the hammer projects into said opening, so that when the hammer falls it strikes the firing pin, giving it a sufficient impulse to travel forward by momentum and explode the primer. With the gun in its normal closed condition, however, the firing pin, while in engagement with the striking face of the hammer cannot receive any impulse therefrom, unless the hammer is first drawn back. The said striking face is arranged to lie flush with the front face of the frame, so as to prevent the firing pin from entering the opening and thereby preventing the relative rotary locking movement when the hammer is down. In firing the gun, the sear  $e^3$  is disengaged from the shoulder  $e^7$  on the hammer hub by the action of the cam-surface  $e^8$  behind the shoulder.

#### Claims:

1. In a repeating fire arm, the combination with a frame; of a breech block connected with the frame; a barrel longitudinally movable with relation to said breech block having a sliding connection therewith and both capable of being turned with relation to the frame; and means operated in response to the turning movement for locking and unlocking the barrel and frame.

2. In a repeating fire arm, the combination with a stock of a breech block longitudinally stationary but capable of a limited turning movement with relation to said stock, a barrel, and means for locking the barrel to the stock by said turning movement.

3. In a repeating fire-arm, the combination with a stock; of a breech-block longitudinally stationary, but capable of a limited rotary movement with relation to said stock; a barrel; means for locking the barrel to the stock by the rotary movement

aforesaid; a magazine connected with the barrel; and means operated in response to a relative longitudinal movement of the breech-block and barrel for inserting a cartridge from the magazine into the space between the barrel and the breech-block.

4. In a repeating fire-arm, the combination with a breech-block; of a barrel longitudinally movable with relation thereto; a magazine below the barrel; an elbow lever pivoted behind and below the magazine in a rearward extension of the barrel; and means whereby one arm of said elbow lever is engaged and moved by a part of the breech block at each end of the relative longitudinal movement of the breech-block and the barrel.

5. In a repeating fire-arm, the combination with a breech-block; of a barrel and magazine having a rearward extension sleeved on the breech-block; an elbow lever pivoted in said rearward extension behind the magazine, one arm of said elbow-lever normally lying parallel with the rearward extension, and the other arm projecting into a channel in the breech-block, and having lateral projections extending into a longitudinal slot formed in the side of the breech-block; and a shoe connected with that arm of the lever which is parallel to the rearward extension, to engage and lift a cartridge, substantially as described.

6. In a repeating fire-arm, the combination with a breech-block; of a barrel and magazine having a rearward extension sleeved on the breech-block; an elbow lever pivoted in said rearward extension behind the magazine, one arm of said elbow-lever normally lying parallel with the rearward extension, and the other arm projecting into a channel in the breech-block, and having lateral projections extending into a longitudinal slot formed in the side of the breech-block; and stops formed in the rearward extension to limit the movement of the elbow lever, substantially as described.

7. The combination with a breech-block; of a barrel provided with a magazine, said barrel and magazine having a sleeve fitting over the breech-block and longitudinally movable thereon; an extractor hook connected with the breech-block; an ejector in the sleeve; means for inserting a cartridge from the magazine into the space between the breech-block and barrel, said means operating after the spent shell has been pulled into engagement with the ejector; and a forward extension below the face of the breech-block to limit the rearward movement of the new cartridge, substantially as and for the purpose described.

8. The combination with a stock and lock, of a breech-block having a swivel connection with the lock-frame; a barrel having a non-circular sleeve fitting the block, said barrel

and block being together capable of rotary movement with relation to the lock-frame; and means for locking together and unlocking said sleeve and said frame in response  
5 to such rotary movement.

9. The combination with a stock and lock, of a breech-block having a swivel connection with the lock-frame; a barrel having a non-circular sleeve fitting the block, said  
10 barrel and block being together capable of rotary movement with relation to the lock-frame; and a bayonet joint for locking said sleeve to said frame.

10. The combination with a frame provided with a hammer and a trigger, of a breech block having a limited turning movement relatively to said frame, and provided with a firing pin; a barrel longitudinally  
15 movable with relation to the frame and also capable of being turned with relation to the frame, and a locking device operated by the turning movement of the barrel; said firing  
20 pin and hammer being out of line when the breech block is turned to the unlocked position, and brought into operative relations  
25 when the breech block and barrel are in locked position.

11. In a repeating fire arm, the combination with a breech block; of a barrel and  
30 magazine provided with a sleeve fitting over said breech block and longitudinally mov-

able thereon; a lifter consisting of an elbow lever pivoted in said sleeve below the magazine; means whereby said lever is rocked in opposite directions respectively at the ends  
35 of the movement of the breech block relative to the barrel, and maintained in one position during such movement; and a forward projection from the breech block below the face thereof and in line with the magazine to  
40 engage a cartridge in said magazine prior to the movement of the lifter.

12. In a repeating fire-arm, the combination with a stock and a breech-block longitudinally stationary with relation thereto;  
45 of a barrel and magazine longitudinally movable with relation to said stock and breech-block; a lifter below the magazine and behind the barrel; an engaging device forming part of the breech-block, to engage  
50 and operate said lifter at the end of the movement of the barrel relative to the breech block; and a locking device for the parts which have the relative longitudinal movement.  
55

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

JOSEPH H. WESSON.

Witnesses:

GEO. P. CHAPIN,  
H. L. POMEROY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."